

REMARKS

Status

Claims 52-76 are the pending claims in the application. In a previous amendment submitted by the Applicant, Applicant elected claims 64-76 for continued prosecution with claims 75 and 76 withdrawn in the lastest Office Action. Claims 52-63 and 75-76 have been included for possible rejoinder. The present amendment does not cancel or add any claims. Accordingly, it is claims 52-76, as now amended, which are at issue.

The Rejection

Claims 64-69 and 71 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gohrt et al. (US 2004/0238443) or Gorak et al. (DE 19701045) in view of Smith (EPO 466,954). Claim 70 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Gohrt et al. or Gorak et al. in view of Smith and further in view of Shelden et al. (US 5,417,938). Claim 72 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Gohrt et al. or Gorak et al. in view of Smith and further in view of Phillips (US 2006/0273008). Claim 73 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Gohrt et al. or Gorak et al. in view of Smith and further in view of Block et al. (US 6,905,576). And finally, claim 74 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Gohrt et al. or Gorak et al. in view of Smith and further in view of Fennhoff et al. (US 6,307,111).

Applicant thanks the Examiner for the search, the explanation for the rejections and especially for the Examiners time during a telephone interview held on April 2, 2009.

The Invention

The present invention is directed to a method and a device for transferring substances between two layers of liquid or between two layers of gas. The liquid, for example water to be

cleaned, is passed through a convective layer adjacent a receiving layer. The receiving layer will initially be filled with water from the convective layer and the water in the receiving layer will be stagnant, running in another direction and/or running with a different speed when compared to the water in the convective layer. When in use, the water of the convective layer will pass parallel to the water of the receiving layer and substances can be transferred, for example from the water of the convective layer to the water of the receiving layer, thereby performing a filtration of the water passed through the convective layer.

Remarks Directed to the Rejection of Claims 64-69 and 71 under 35 U.S.C. §103(a)

With respect to independent claim 64, this claim has been carefully amended such that the device can transfer substances between layers of liquid or between layers of gas where at least one receiving layer for conducting either liquid or gas has the liquid or gas fill any empty space within the receiving layer. In addition, the at least one receiving layer is designed as a structure with a fluid-proof or nearly fluid-proof frame located to obtain almost stagnant liquid or gas in the receiving layer or to obtain a liquid or gas running in another direction than in the convective layer. The fluid-proof or nearly fluid-proof frame can have an inlet and/or outlet structure, a grid-like structure or a ridge and valley structure perpendicular to the main direction of flow of the convective layer. Furthermore, the at least one receiving layer can have a filtering material selected from the group stated in the claim and the at least one receiving layer and at least one convective layer have a length of at least 5 meters.

Support for the liquid or gas filling out empty space of the receiving layer is found in the originally filed application on page 36, lines 20-23; Figure 3; Figure 14 together with the text on page 49, lines 17-19; and Figure 15 together with the text on page 50, lines 24-25. The basis for the receiving layer being designed as a structure having a fluid-proof or nearly fluid-proof frame

located to obtain almost stagnant liquid or gas in the receiving layer or to obtain a liquid or gas running in another direction than the convective layer is found on: page 17, lines 12-23; Figure 3 with associated text on page 9, lines 10-13 and page 33, lines 1-5; and Figures 4a and 4b with associated text on page 9, lines 15-20 and page 33, lines 13-17.

For example, page 17, lines 12-23 of the specification teaches that “[i]f the receiving layer is a single structure . . . [s]tagnant fluid can be obtained by confining the fluid in the receiving layer, e.g. by designing the single structure as a fluid proof or nearly fluid proof frame . . .” In addition, page 33, lines 1-5 states that the basic construction of a filter-cell is shown in Figure 3 and consists of a “closed bottom chamber holding the receiving layer.” As such, Applicant submits no new matter has been added to the application.

The basis for the filtering material selected from the group of “sand, gravel, perlite, . . . cocos fibres, other plant fibres, and modification hereof” is found on page 18, lines 1-9 and in claims 58 and 69. And finally, the basis for “said at least one receiving layer and said at least one convective layer have a length of at least 5 m” is found in the description on page 25, line 17.

Gohrt et al. describes at structure where two or more different processes can be performed in a single process unit with a down-flowing liquid and a rising gas in the interior of the column (paragraph [0017]). The device as described in claim 64 does not describe a simultaneous flow of liquid and gas in the device, rather only gas or liquid is treated in the device. Furthermore in claim 64 it is described that the filter is located such that it is positioned horizontally or at an angle between horizontal and inclining 45° from horizontal.

Gorak et al. describes packings and columns similar to Gohrt et al., the difference being the material used for the separation elements and second functionality elements. Thus the

function and flow directions are similar in the two documents. The invention of claim 64 is therefore different from the columns of Gorak et al. for the same reasons as described in respect of Gohrt et al.

Smith describes a reaction-distillation column, but does not describe that only liquid or gas is to be treated in the column.

In conclusion, Gohrt et al., Gorak et al. and Smith do not describe the invention of claim 64 nor suggest to make such an invention.”

Conclusion

In view of the amendments and remarks presented herein, Applicant respectfully submits that claims 64-74 are now in condition for allowance. In addition, Applicant requests that the Examiner consider rejoining claims 52-63 and 75-76 as currently amended to the application. Any questions, comments or suggestions the Examiner may have which would place the application in still better condition for allowance should be directed to the undersigned attorney.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 07-1180.

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